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AMSAT NEWS SERVICE
ANS-200

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-200 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 200.01
>From AMSAT HQ KENSINGTON, MD.
DATE July 19, 2015
To All RADIO AMATEURS
BID: $ANS-200.01

AMSAT-NA Board of Directors Ballots in the Mail

Ballots have been mailed to AMSAT-NA members in good standing, and must be returned to the AMSAT-NA office by 15 SEP 2015 in order to be counted. Those sent outside North America were sent by air mail. If you have not received your ballot package in a reasonable time for your QTH, please contact the AMSAT-NA office. Your completed ballot should be sent as promptly as possible, and those from outside North American preferably by air mail or other

expedited means.

This year there are eight candidates:

Barry Baines, WD4ASW
Jerry Buxton, N0JY
Steve Coy, K8UD
Drew Glasbrenner, KO4MA
Mark Hammond, N8MH
EMike McCardel, KC8YLD
Bob McGwier, N4HY
Bruce Paige, KK5DO

The four candidates receiving the highest number of votes will be seated as voting Board Members with two year terms. The two candidates receiving the next highest number of votes will be non-voting Alternate Board Members with
terms of one year. Please vote for no more than four candidates.

Please take the time to review the candidate statements that accompany the ballot and determine who you wish to see on the Board. Election of Board members is both an obligation as well as an opportunity by our membership to
help shape the future direction of AMSAT-NA.

[ANS thanks AMSAT-NA for the above information]

W5KUB.com webcast with AMSAT; New Perk for Fox-1C donations

Check out the AMSAT VPs of Engineering, Jerry Buxton, N0JY, and Operations, Drew Glasbrenner, KO4MA on the W5KUB.com webcast from July 14th, talking all
about Fox and AMSAT.

https://www.youtube.com/watch?v=CGvaQCF-Rro

Also, we have a new perk available for donations of $1,000 or more. Eighteen donors will receive engraved, mounted solar panel protective covers actually used on Fox-1C. Don’t miss this limited availability perk for supporting your
amateur satellite program! Donations may be made via the AMSAT website, via the
FundRazr crowdsourcing app at
http://fnd.us/c/6pz92/sh/561Zd
or via the AMSAT office at (888) 322-6728.

[ANS thanks AMSAT-NA for the above information]

School Shortlist for Tim Peake Space Station Contact

On Tuesday, July 14 at the UK Space Conference in Liverpool the names were announced of the UK schools which have won the opportunity to contact UK

astronaut Tim Peake via amateur radio during his mission to the International
Space Station. Tim holds the call sign KG5BVI and is expected to use the special call GB1SS from the amateur radio station in the Columbus module of the
ISS.

Tim will launch to the ISS in December of this year and will spend 6 months working and living in space. The Amateur Radio competition is a collaboration
between the UK Space Agency, the Radio Society of Great Britain (RSGB) and the
European Space Agency (ESA).

Selected schools will host a direct link-up with the ISS during a two-day, space related STEM workshop which will be the culmination of a large range of
learning activities using space as a context for teaching throughout the curriculum.

ARISS UK (Amateur Radio on the International Space Station) will provide and set up all necessary radio equipment such as low earth orbit satellite tracking
antennas and radios, to establishing a fully functional, direct radio link with
the ISS from the schools' very own premises. In a ten-minute window when the ISS will be over the UK, an amateur radio contact will be established with Tim,
and students will be able to ask him questions about his life and work on board
the ISS.

Owing to the nature of scheduling the links, which is dependent on geography,
the exact orbit of the ISS and the crew schedules, the exact dates and times for possible links will not be known until 2 weeks before the link up is scheduled. The shortlisted schools will all be prepared for such scheduling challenges and, by having a number of schools, we can ensure that all links are
used.

Jeremy Curtis, Head of Education at the UK Space Agency, said:
We're delighted with the amount of interest in this exciting project and look forward to working with the selected schools as they make a call into space.

Both Tim's space mission and amateur radio have the power to inspire young people and encourage them into STEM subjects. By bringing them together we can
boost their reach and give young people around the UK the chance to be involved
in a space mission and a hands-on project that will teach them new skills.

The following schools have been shortlisted for a possible ARISS call with Tim
whilst he is in orbit on the ISS:

- Ashfield Primary School, Otley, West Yorkshire
- The Derby High School, Derby
- The Kings School, Ottery St Mary
- Norwich School, Norwich
- Oasis Academy Brightstowe, Bristol
- Powys Secondary Schools Joint, Powys
- Royal Masonic School for Girls, Rickmansworth

Sandringham School, St Albans
St Richard’s Catholic College, Bexhill-on-Sea
Wellesley House School, Broadstairs

John Gould, G3WKL, President of the RSGB, said:
The Radio Society of Great Britain will be delighted to support shortlisted schools by teaching their pupils about amateur radio and helping them through their licence exams where appropriate. Members of our Youth Committee are based across the UK and will be keen to visit the chosen schools
in their area and chat to the pupils.

The ARISS UK Operations team will now work with the shortlisted schools to prepare them for this exceptional opportunity during the mission of the first
British ESA Astronaut.

ARISS Europe http://www.ariss-eu.org/

[ANS thanks ARISS and AMSAT-UK for the above information]

SA AMSAT Kletskous Solar Cell Purchase

SA AMSAT made a significant investment in the KLETSKOUS project by placing an order for solar cells with an overseas supplier. The solar cells will be used to build the first prototype solar panels for testing with the power unit.

The electrical power system (EPS) is the sub-system that provides various other systems and the payload with power, and controls the charging and conditioning of the batteries. The first prototype was tested with panels borrowed from the Denel Dynamic CubeSat project. "We are looking forward to building our own panels to meet the physical dimension requirements of the space frame," Hannes Coetzee, ZS6BZP, said. Fritz Sutherland, ZS6FSJ, who built the prototype, which he showed at the recently held SA AMSAT Space Symposium, designed the EPS. Both Hannes Coetzee and Frik Wolff, ZS6FZ, who recently joined the project team, will build the solar panels.

The Kletskous project is funded by donations from radio amateurs. To learn more about the project and how to make your financial contribution visit www.amsatsa.org.za

[ANS thanks SA AMSAT and the SARL weekly news in English 2015-7-11 for the above information]

Pico and Nano Satellite Workshop in Würzburg

The Pico and Nano Satellite Workshop in Würzburg will be held on September 15-16, 2015.

We are happy to announce that several national and international institutions acknowledged the value of our workshop by providing

co-sponsoring for this event. Thus, we would like to point out the great opportunity to further disseminate your scientific results as selected best contributions will be invited for paper publication in a conference proceedings in the IAA book series on Small Satellites.

If you want to take the opportunity to present your current progress in the field of pico- and nano-satellites please do not forget to submit your presentation abstract by sending an email to
pina2015(a)informatik.uni-wuerzburg.de
until July 20, 2015.

For more information and latest updates about the workshop please visit our website:

http://www7.informatik.uni-wuerzburg.de/conferences/pina2015/

[ANS thanks the PiNa Team for the above information]

International Space Colloquium Guildford – Speakers for Saturday, July 25

There is a great line up of speakers for the AMSAT-UK International Space Colloquium at the Holiday Inn, Guildford as well as visits to the satellite construction facilities at the SSTL Kepler Building. The event is open to all.
Admittance is £10 for the day and car parking is free.

Speakers for Saturday, July 25

• Introduction by Prof. Sir Martin Sweeting G3YJO OBE, FRS, FREng, FIET
• SSTL Update by Tony Holt, Director, SSTL
• The Satellite Applications Catapult PocketQube Kit by Chris Brunskill
• AMSAT-DL Presention by Peter Guelzow DB2OS
• What else does Space do for You! by Prof. Richard Holdaway, former Director
RAL Space
• The Nayif-1 opportunity by Wouter Weggelaar PA3WEG
• AMSAT-NA / Fox-1 Presentation by Drew Glassbrenner KO4MA
• Dutch Satellite Days by Ivo Klinkert PA1IVO

Further details at
http://amsat-uk.org/colloquium/

[ANS thanks AMSAT-UK for the above information]

Duchifat1 Updates

Duchifat1, launched 1 year ago, was supposed to have onboard a "standard" space APRS transceiver operating on 145.825MHz. That would have made the satellite compatible with ISS, other APRS satellites and APRS-IS.

Unfortunately, a short time before launch, we realized that technically we couldn't keep the intended 145.825MHz transceiver in the final satellite

configuration but we still wanted to make some contribution to amateur radio in space. After a quick research we discovered that the 2nd transceiver onboard Duchifat1, the ISIS (Netherlands) TRXUV planned for Duchifat1's command and telemetry can be programmed to also accept APRS packets!, however, limited to 14 characters long. Also, the downlink digital modulation was not the common space APRS of 1200bd AFSK but 1200bd BPSK, and the uplink frequency is in the UHF band.

We therefore came with the idea of supporting COMPRESSED APRS, and instead of the standard digipeater, we implement kind of "store&forward" function in which the satellite collects packets during its flight in orbit and the students of Herzliya Science Center will download those packets and display them on a world map in a web site programmed by them.

We published here a few weeks ago the opening of this service and put in our web site detailed instructions on how to use the Byonics TinyTrak4 (TT4) tracker, with or without GPS to generate packets in the required format that Duchifat1 will accept. So far, TWO pioneers used this service. THANKS PETER & MIKE!

While the TT4 solution is still the best we know for sending your actual live position to Duchifat1, we are happy to announce the 'APRS Encoder', a new tool in our web site that can generate for you the COMPRESSED APRS packet for Duchifat1.

The input for the new APRS Encoder is the station's (or nearby) coordinates set that can be obtained from Google Maps, so this solution is naturally adequate for stationary base stations, while mobile stations should still use the Byonics TT4.

The output of the APRS Encoder is a 14 character long Compressed APRS packet that can be converted to 1200bd AFSK with a hardware TNC or software like MIXW – just copy the 14 chars string and paste it into the MIXW window. The MIXW should be set to mode Packet, using the most common "VHF 1200 baud (Standard 1200/2200Hz)" setting. Prior registration is required.

All the details on the satellite, the registration and the APRS Encoder are at this link:
www.h-space-lab.org
Please read all the documentation in the site.

We wish you all good luck and enjoy!

73 from 4X4HSC team: instructors 4Z1WS and 4X1DG, and the students!

[ANS thanks AMSAT-BB and AMSAT-UK for the above information]

Amateur Radio Geostationary Transponder and the Adventures of a Hacker Turned
Ham

HamRadioNow episode 211 features two presentations given at the TAPR/AMSAT banquet on Friday, May 15 at the 2015 Dayton Hamvention. The first is about the
Amateur Radio transponder on the geostationary satellite Es'hail 2 by Thani Ali
al-Malki followed by Adventures of a Hacker Turned Ham by Michael Ossmann AD0NR.

The night begins with a short presentation on what will be the first Amateur Radio transponder on a geostationary satellite, a project of the Qatar Amateur
Radio Society, with help from AMSAT DL (Germany). The satellite, Es'HailSAT-2,
is owned by the Qatar Satellite Company, and senior engineer Thani Ali al-Malki
will give the details. Western Hemisphere hams will be disappointed that the satellite footprint won't cover anything in North America or Australia, and just a bit of South America. The satellite is primarily a communications system
for Qatar and the Middle East, but the ham transponder will also cover Europe,
Africa and western Asia (but also missing the China coast and Japan).

Michael Ossmann, AD0NR, founder of Great Scott Gadgets grew up as a computer nerd embracing the hacker ethos. Eventually Michael became very interested in
the security of wireless systems such as remote keyless entry, garage door openers, Wi-Fi, and Bluetooth. He designed Ubertooth One, a Bluetooth sniffer
that was successfully funded on Kickstarter.

Not one to rest, Michael later designed and successfully funded HackRF One, an
open source SDR platform that attracted the attention of the amateur radio community. Michael talks about his unique perspective on the community as an outsider looking in, why he resisted getting an amateur radio license for years, and why he finally decided to join. Michael shares his thoughts on what
it means to be a hacker, what it means to be a ham, and what amateur radio may
look like in the decades to come.

TAPR President Steve Bible N7HPR's introduction establishes the youth theme with an interesting survey of the crowd.

http://arvideonews.com/hrn/HRN_Episode_0211.html

Previous editions of HamRadioNow
http://www.youtube.com/user/HamRadioNow/videos

Es'hail 2 geostationary satellite
http://amsat-uk.org/satellites/geosynchronous/eshail-2/

[ANS thanks AMSAT-UK for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

Friday and Saturday, 7-8 August 2015 – Austin Summerfest in Austin TX

*Saturday, 15 August 2015 – Arctic Amateur Radio Club Hamfest in Fairbanks AK

*Sunday, 16 August 2015 – demonstration at Chena Hot Springs AK

*Saturday and Sunday, 22-23 August 2015 – Boxboro Hamfest and ARRL New England Convention in Boxborough MA

*Saturday and Sunday, 5-6 September - ARRL Roanoke Division Convention Shelby, NC Hamfest, AMSAT Forum scheduled for Saturday

*Friday, Saturday, and Sunday, October 16-18 2015, AMSAT Symposium in Dayton OH (Dayton Crown Plaza)

[ANS thanks AMSAT-NA for the above information]

ARISS News

Contacts

Pima County 4H/Vail Vaqueros 4H Club, Tucson, AZ, direct via W7LB
The ISS callsign was scheduled to be RSØISS/OR4ISS
The scheduled astronaut was Mikhail Korniyenko RN3BF
Contact was not successful: Wed 2015-07-15 18:01:42 UTC 67 deg
ARISS is attempting to determine what happened.

Moon Day/ Frontiers of Flight Museum, Dallas, TX, telebridge via W6SRJ
The ISS callsign was scheduled to be RSØISS/OR4ISS
The scheduled astronaut was Mikhail Korniyenko RN3BF
Contact was successful: Sat 2015-07-18 16:58 UTC 84 deg
The Moon Day contact was successful with 11 questions asked and 10 fully answered. The answer to the 11th question was lost in the noise at LOS.

Participants asked the following questions:
1. How do you get internet?
2. How is your perspective of Earth different from ours who have not been to
space?
3. What has been your most exciting and memorable experience during your time
on the International space station?
4. As you don't have gravity in the Space Station, and nothing drops or drips

down, what happens to a scoop of ice cream in space when it melts? Once it
has melted, can you suck it up with a straw? Have you ever tried that?
5. What happens to fire in space?
6. What do you eat when in space?
7. What happens if an astronaut gets sick in space? Do they have a doctor on
board? If not, do they have to go back to Earth early for treatment?
8. Has your time on the space station helped in the research of finding a way
to send someone to Mars for a longer period of time?
9. If a meteorite, space junk, or another spacecraft collides with the ISS,
or there was a fire on board, what kind of emergency procedures would be
performed to ensure station integrity and crew safety?
10. What has been your biggest unexpected obstacle, and how did you solve it
and still reach your goal?
11. How do you put on your spacesuit to go out in space?

Upcoming ARISS Contacts

Albert Park College, Albert Park, Victoria, Australia, telebridge via W6SRJ
The ISS callsign is presently scheduled to be RSØISS/OR4ISS
The scheduled astronaut is Mikhail Korniyenko RN3BF
Contact is a go for: Mon 2015-07-20 08:40:28 UTC 30 deg

Watch
http://www.ariss.org/upcoming-contacts.html
for information about upcoming contacts as they are scheduled.

[ANS thanks ARISS, and Charlie, AJ9N for the above information]

Satellite Shorts From All Over

* Illinois High Altitude Balloon to Carry Repeater and SSTV

The Balloon Assisted Stratospheric Experiments team at DePauw University plans to launch a high altitude balloon, BASE-85, on August 8, 2015 at 07:45 CDT (UTC - 5). The launch will be from the Chanute Air Museum in Rantoul, Illinois which is approximately 100 miles south of Chicago. The amateur radio payload on this balloon will include:

+ Telemetry: APRS: 144.390Mhz, APRS.FI: WB9SA-11; QRZ: WB9SA
+ Cross-Band FM Repeater: Uplink 144.34 MHz; Downlink 446.025 MHz.
+ SSTV unit will operate on 147.48 MHz using Scottie2 -
72 seconds on 30 seconds off.
+ 900 MHz tracking system.
+ DF beacon at 443 MHz

Website:
http://www.depauw.edu/academics/departments-programs/physics-astronomy/department-research/base/

[ANS thanks the BALLOON_SKED(a)yahoogroups.com e-mail list for the above information]

ARISS SSTV Images Commmemorate 40th Anniversary of the Apollo-Soyuz Mission

40 years ago this week, the historic joint Apollo-Soyuz mission was conducted. Apollo-Soyuz (or Soyuz-Apollo in Russia) represented the first joint USA-Soviet mission and set the stage for follow-on Russia-USA space collaboration on the Space Shuttle, Mir Space Station and the International Space Station. The Soyuz and Apollo vehicles were docked from July 17-19, 1975, during which time joint experiments and activities were accomplished with the 3 USA astronauts and 2 Soviet Cosmonauts on-board. Apollo-Soyuz was the final mission of the Apollo program and the last USA human spaceflight mission until the first space shuttle mission in 1981.

To commemorate the 40th anniversary of this historic international event, the ARISS team has developed a series of 12 Slow Scan Television (SSTV) images that will be sent down for reception by schools, educational organizations and ham radio operators, worldwide. The SSTV images are planned to start sometime Saturday morning, July 18 and run through Sunday July 19. These dates are tentative and are subject to change. The SSTV images can be received on 145.80 MHz and displayed using several different SSTV computer programs that are available on the internet.

We encourage you to submit your best received SSTV images to:

http://spaceflightsoftware.com/ARISS_SSTV/submit.php

The ARISS SSTV image gallery will post the best SSTV images received from this event at:

http://spaceflightsoftware.com/ARISS_SSTV/index.php

Also, as a special treat, on Saturday July 18 the ISS Cosmonauts will take time out to conduct an ARISS contact with students attending the Moon Day/Frontiers of Flight Museum event in Dallas Texas. This Russian Cosmonaut-USA Student contact is planned to start around 16:55 UTC through the W6SRJ ground station located in Santa Rosa, California. ARISS will use the 145.80 MHz voice frequency downlink (same as the SSTV downlink) for the Moon Day contact.

For more information on ARISS, please go to our web site:
www.ariss.org

The ARISS international team would like to thank our ARISS-Russia colleague, Sergey Samburov, RV3DR, for his leadership on this historic commemoration.

[ANS thanks ARISS, and Frank H. Bauer, KA3HDO, ARISS International Chair for
the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive addi-
tional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the stu-

dent rate for a maximum of 6 post-secondary years in this status.
Contact Martha at the AMSAT Office for additional student membership
information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org